

AMENDMENTS TO THE CLAIMS

Please amend claims 5-7, 16, 20-22, 25-27, and 30. Please add claims 35-41. Please cancel claims 13-15. This listing of the claims, if entered, replaces all prior versions of the claims in the application.

1-4. (Cancelled)

5. (Currently Amended) A method comprising:

- (a) receiving frames from a plurality of ring networks at a single network element;
- (b) monitoring said frames at a single network element for a condition indicative of a failure in one of said plurality of ring networks;
- (c) detecting a failure in one of said plurality of ring networks, wherein said detecting said failure comprises reading a portion of a first frame;
- (d) determining which ring network among said plurality of ring networks is failing, wherein
 - a first one of said ring networks is said failing ring network; and
- (e) providing said portion of said first frame to a first one of a plurality of tasks, in response to said determining, wherein
 - said first one of the plurality of tasks corresponds to said first one of said ring networks, and
 - said frame is received from said first one of said ring networks;
- (f) providing a portion of a second frame to a second one of a plurality of tasks, in response to determining that a second one of said ring networks is failing, wherein
 - said second one of the plurality of tasks corresponds to said second one of said ring networks, and
 - said second frame is received from said second one of said ring networks;
 - and
- (g) rerouting frames of the first one of said ring networks in response to detecting that said first ring network is a failing ring network, wherein said rerouting is performed by said first one of said tasks.

6. (Currently Amended) The method of claim 5 wherein said portion of said first a frame is an overhead section of a Synchronous Optical Network (SONET) Synchronous Transport Signal (STS).

7. (Currently Amended) The method of claim 6 wherein said portion of said first a frame includes K-Bytes of the SONET STS.

8. (Previously Presented) The method of claim 7 wherein the act of rerouting frames is in accordance with Automatic Protection Switching (APS) protocol.

9. (Previously Presented) The method of claim 5 wherein said plurality of ring networks are Synchronous Optical Network (SONET) Bidirectional Line Switched Ring (BLSR) networks.

10-15. (Canceled)

16. (Currently Amended) A network element comprising:

a first line interface of said network element coupled to a first ring network;

a second line interface of said network element coupled to a second ring network;

a cross-connect device of said network element, said cross-connect device including a computer program for monitoring information from said first ring network and said second ring network; and

wherein said computer program monitors said information for conditions indicative of a failure in said first ring network or said second ring network,

wherein said cross-connect device further implements a plurality of tasks, wherein

a first one of said tasks is configured to reroute frames of said first ring network in response to said computer program detecting a failure in said first ring network, and

a second one of said tasks is configured to reroute frames of said second ring network in response to said computer program detecting a failure in said second ring network.

17. (Original) The network element of claim 16 wherein said first ring network and said second ring network are Synchronous Optical Network (SONET) Bidirectional Line Switched Ring (BLSR) networks.

18-19. (Cancelled)

20. (Currently Amended) A network element comprising:

a processor;

a plurality of network interfaces, each of said network interfaces coupled to one of a plurality of ring networks and to said processor;

computer readable medium coupled to said processor; and

computer code, encoded in said computer readable medium, configured to cause said processor to:

receive frames from said plurality of ring networks;

monitor said frames for a condition indicative of a failure in one of said plurality of ring networks;

detect a failure in one of said plurality of ring networks, wherein said detecting said failure comprises reading a portion of a first frame;

determine which ring network among said plurality of ring networks is failing wherein

a first one of said ring networks is said failing ring network; and

provide said portion of said first frame to a first one of a plurality of tasks, in response to said determining, wherein

said first one of the plurality of tasks corresponds to said first one of said ring networks, and

said frame is received from said first one of said ring networks;

provide a portion of a second frame to a second one of a plurality of tasks, in

response to determining that a second one of said ring networks is failing, wherein

said second one of the plurality of tasks corresponds to said second one of said ring networks, and

said second frame is received from said second one of said ring networks;

and

reroute frames of said first one of said ring networks in response to detecting that
said first ring network is a failing ring network, wherein
said rerouting is performed by said first one of said tasks.

21. (Currently Amended) The network element of claim 20, wherein said portion of said first a-frame is an overhead section of a Synchronous Optical Network (SONET) Synchronous Transport Signal (STS).

22. (Currently Amended) The network element of claim 21, wherein said portion of said first a-frame includes K-Bytes of the SONET STS.

23. (Previously Presented) The network element of claim 22, wherein computer code configured to cause said processor to reroute frames of said failing ring network is further configured to cause said processor to reroute frames of said failing ring network in accordance with Automatic Protection Switching (APS) protocol.

24. (Previously Presented) The network element of claim 23, wherein said plurality of ring networks are Synchronous Optical Network (SONET) Bidirectional Line Switched Ring (BLSR) networks.

25. (Currently Amended) A computer program product comprising:
 a first set of instructions, executable on a computer system, configured to cause a single network element to receive frames from a plurality of ring networks;
 a second set of instructions, executable on said computer system, configured to monitor said frames for a condition indicative of a failure in one of said plurality of ring networks;
 a third set of instructions, executable on said computer system, configured to detect a failure in one of said plurality of ring networks, wherein said detecting said failure comprises reading a portion of a first frame;
 a fourth set of instructions, executable on said computer system, configured to determine which ring network among said plurality of ring networks is failing, wherein

a first one of said ring networks is said failing ring network; and
a fifth set of instructions, executable on said computer system, configured to provide said
portion of said first frame to a first one of a plurality of tasks, in response to said
determining, wherein
said first one of the plurality of tasks corresponds to said first one of said ring
networks,
said frame is received from said first one of said ring networks;
said fifth set of instructions are further configured to provide a portion of a second
frame to a second one of a plurality of tasks, in response to determining
that a second one of said ring networks is failing,
said second one of the plurality of tasks corresponds to said second one of said
ring networks, and
said second frame is received from said second one of said ring networks; and
a fifth sixth set of instructions, executable on said computer system, configured to reroute
frames of said first one of said ring networks in response to detecting that said
first ring network is a failing ring network, wherein
said sixth set of instructions are executable to implement said first one of said
tasks; and
 computer readable media, wherein said computer program product is encoded in said
 computer readable media.

26. (Currently Amended) The computer program product of claim 25, wherein said portion of said first a-frame is an overhead section of a Synchronous Optical Network (SONET) Synchronous Transport Signal (STS).

27. (Currently Amended) The computer program product of claim 26, wherein said portion of said first a-frame includes K-Bytes of the SONET STS.

28. (Previously Presented) The computer program product of claim 27, wherein said fifth set of instructions is further configured to reroute frames of said failing ring network in accordance with Automatic Protection Switching (APS) protocol.

29. (Previously Presented) The computer program product of claim 28, wherein said plurality of ring networks are Synchronous Optical Network (SONET) Bidirectional Line Switched Ring (BLSR) networks.

30. (Currently Amended) A network element comprising:
 means for receiving frames from a plurality of ring networks at said network element;
 means for monitoring said frames for a condition indicative of a failure in one of said plurality of ring networks;
 means for detecting a failure in one of said plurality of ring networks, wherein said detecting said failure comprises reading a portion of a first frame;
 means for determining which ring network among said plurality of ring networks is failing, wherein
a first one of said ring networks is said failing ring network; and
means for providing said portion of said first frame to a first one of a plurality of tasks, in
response to determining that the first one of said ring networks is said failing ring
network, wherein
said first one of the plurality of tasks corresponds to said first one of said ring
networks,
said frame is received from said first one of said ring networks;
means for providing a portion of a second frame to a second one of a plurality of tasks, in
response to determining that a second one of said ring networks is failing,
said second one of the plurality of tasks corresponds to said second one of said
ring networks, and
said second frame is received from said second one of said ring networks; and
 means for rerouting frames of said failing ring network, wherein the means for rerouting
frames implement said first one of said tasks.

31. (Currently Amended) The network element of claim 30 wherein said portion of said first a-frame is an overhead section of a Synchronous Optical Network (SONET) Synchronous Transport Signal (STS).

32. (Currently Amended) The network element of claim 31 wherein said portion of said first a-frame includes K-Bytes of the SONET STS.

33. (Previously Presented) The network element of claim 32 wherein said means for rerouting frames comprises means for rerouting frames in accordance with Automatic Protection Switching (APS) protocol.

34. (Previously Presented) The network element of claim 33 wherein said plurality of ring networks are Synchronous Optical Network (SONET) Bidirectional Line Switched Ring (BLSR) networks.

35. (New) The method of claim 5, further comprising:
receiving provisioning information, wherein
said provisioning information comprises information identifying components of
each of said ring networks; and
initiating a state machine for each ring network identified in said provisioning
information.

36. (New) The method of claim 35, further comprising:
generating a first ring map for said first one of said ring networks, wherein
said generating is performed by a first state machine,
said first state machine is associated with said first one of said ring networks, and
said first ring map comprises a network address and a node ID of each network
element included in said first one of said ring networks.

37. (New) The method of claim 36, further comprising:
generating a first squelch table for said first one of the ring networks, wherein
said generating is performed by said first state machine,

said first squelch table comprises information indicating where a particular Synchronous Optical Network (SONET) Synchronous Transport Signal (STS) is added within said first one of said ring networks, and said first squelch table comprises information indicating where said particular SONET STS is dropped within said first one of said ring networks.

38. (New) The method of claim 37, further comprising:

generating a first payload table for said first one of said ring networks, wherein said generating is performed by said first state machine, and said first payload table comprises information indicating a type of each SONET STS in said first one of said ring networks.

39. (New) The method of claim 38, further comprising:

determining whether a new ring network is being provisioned, based on said provisioning information.

40. (New) The method of claim 38, further comprising:

sending said first ring table, said first squelch table, and said first payload table to said first one of said tasks.

41. (New) The method of claim 5, wherein said determining which ring network among said plurality of ring networks is failing comprises:

receiving said portion of said first frame in a first time slot of a plurality of time slots, wherein said portion of said first frame is conveyed in the first time slot via a system communication link coupling a timing communications and control card and a cross-connect card; and accessing mapping information, wherein the mapping information identifies that information corresponding to the first one of said ring networks is conveyed in said first time slot.